Trauma Performance Improvement

## "Meat and Potatoes" of the Trauma Program

Trauma Performance Improvement

- Systematic evaluation of care for each trauma patient
- Performance improvement (PI) for care of the injured patient is a central element of the Montana Trauma System
- Developing a trauma performance improvement program should:
  - Contribute to patient care
  - Be sustainable
  - Not overwhelm staff who have many other demands on their time
  - Be integrated into the hospital PI program

The term for this process has undergone a name evolution starting with "quality assurance". This evolved into "total quality management" then "continuous quality improvement" and now we refer to the process as performance improvement. PI is the systematic evaluation of care for each trauma patient.

PI is conducted at the trauma facilities as well as regionally through the Regional Trauma Advisory Committees (RTAC) and statewide at the State Trauma Care Committee (STCC).

The PI expectations for a Montana designated trauma facility are for timely and thorough trauma patient specific evaluation and management. It is important to have trauma PI integrated into the hospital's existing PI program. The approach is often different from the facility's other PI activities and may actually become a flagship for the other PI processes.

The picture was taken during a TEAM course in Terry.

Continuous Performance Improvement Process
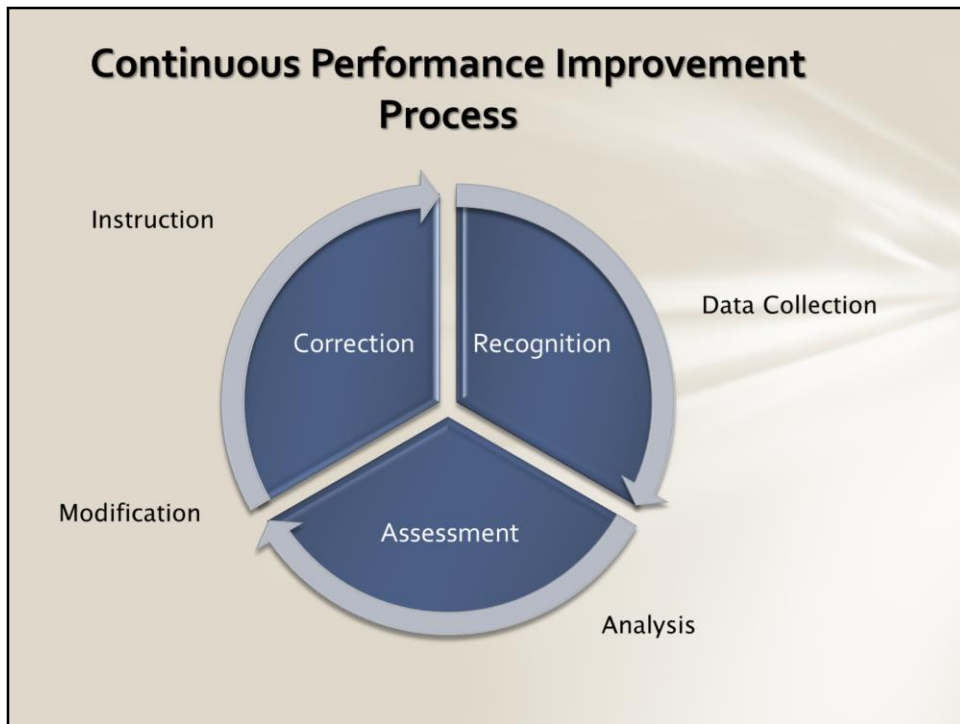
This figure was adapted from Resources for Optimal Care of the Injured Patient 2006.

Trauma PI is a process that identifies trauma patients who come to your facility in order to evaluate and improve the multidisciplinary process of care. It is a continuous cycle of monitoring to recognize issues, attempt to correct them, then re-monitor to assure your corrective action plan was successful. The process mimics patient care; assess, intervene, re-assess.

Resources for Optimal Care of the Injured Patient 2006 states that health care experts believe that individual physicians (medical providers) simply trying harder will not result in better quality and safer patient care. The care process is complex, so responsibility for a patient's surgery and optimal outcome should be shared by all involved.

A Few Tips

The sooner the review, the better

Be thorough and systematic

Figure out a system that works for you

It's easy to get caught up in auditing data points; don't forget the big picture

Keep an open mind, don't pre-judge a case

Start by presuming the system failed, not a person

Should rarely be a punitive process

It's all about the next one...how can we apply what we learned from this patient's care to the care we'll provide for future patients?

Trauma Performance Improvement

▸ Monitoring the performance of trauma care can identify areas for:

- ◦ Improvement in patient outcomes
- ◦ More effective use of resources
- ◦ Methods to expedite appropriate care
- ◦ Education/outreach/injury prevention to focus on
- ◦ Protocol/guideline development

PI Focus Areas

▸ The majority of our Trauma Centers are Trauma Receiving Facilities where the primary focus of the Trauma Program is:
  ◦ Stabilization of seriously injured patients
  ◦ Movement of these patients through the system to definitive care
▸ Those facilities that provide surgical intervention need to add evaluation of that aspect of care
▸ If the facility admits trauma patients to the ICU and acute care ward, evaluation of care in these areas is included

The focus of trauma PI is different for each level of trauma facility. The key is to remember that the trauma program looks at the entire spectrum of care provided to the injured patients that arrive at your facility. PI at all levels will include process evaluation on what happens before the patient enters your ED and in all subsequent care areas.

A Few Tips

No precise prescription for PI exists

Trauma Director must lead

Must be multidisciplinary effort

Adverse outcome does not always indicate poor care & visa versa

Focus on opportunities for improvement rather than on problems

Most errors are related to system or process issues

Timely, accurate collection & analysis of meaningful data is a challenge

How Do I Identify Issues?

Trauma "Concern" forms

Phone calls (dedicated private line)

"Hallway consults"

As you care for the patient

Retrospective chart review

Be a cheerleader, not a nagger

Chart Review Tips

▸ This is not just about extracting data for the Registry...it's about evaluating the care delivered to the patient

▸ Don't miss the forest for the trees...you must consider the big picture:
  ◦ How did this flow & were ATLS guidelines followed?

▸ Start from the start, not with the Discharge Summary

▸ Start with an open mind

▸ Take notes as you go

▸ Understand your role

▸ Know what you're looking for

A Few Tips

Develop mechanisms for identifying (and prioritizing) problems

Take the time to involve lots of people as you create solutions

Involve all those same people when you reassess

Be flexible and open-minded

Be sure that the Administration is aware of the Trauma Program's accomplishments

"It's amazing how much can be accomplished when nobody cares who gets the credit"

Components of Trauma PI

Identify trauma patient

Data – Quality Indicators/Patient Care Review

Issue Identification

Levels of Review

Conclusions/Evaluation

Action Plan

Implementation

Evaluation/"Loop Closure"

Trauma PI can set the tone for PI in the health care facility

This picture was taken in Chester. The TMD, Jeff Chelmo, PA-C, has his back to the camera on the right side. The trauma coordinator is Jenni Chelmo, RN sitting farthest to the right.

Methods of Identifying PI Issues

▸ Staff reporting of quality issues

▸ Active rounding on admitted patients

▸ Trauma deaths are automatic reviews and most facilities review all transfers out

▸ Activations should be reviewed

▸ Establish & monitor quality indicators to review on all trauma patient medical records
  ◦ Appropriateness & timeliness of care
  ◦ Documentation
  ◦ Adherence to care guidelines/protocols
  ◦ Specific complications

▸ Committee meeting discussions

▸ Outside agency PI process review

- ▶ Issue identification can be concurrent or retrospective
  - ◦ Concurrent review occurs in real time
  - ◦ Retrospective review relies on chart review

- ▶ It is ideal if patient rounding done on admitted patients
  - ◦ Conducted by TNC in smaller facilities and by the TNC and TMD in larger facilities

- ▶ Advantages of concurrent issue identification
  - ◦ Ability to impact patient care at the point of service
  - ◦ Increase in staff satisfaction
  - ◦ Improved accuracy

"Celebrate what you've accomplished, but raise the bar a little higher each time you succeed"

Mia Hamm

Types of PI Quality Indicators

Process Measures
- Operational issues relating to the system or structure in which care is delivered
- Clinical care issues

Outcome Measures
- Results of the care given
- Monitoring to establish if the process of care achieved the desired outcome

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Process Measures
Operational issues
System issues
Elements of care that relate primarily to the system or structure in which the care is delivered
Events or complications not specifically related to a provider or disease
- Timeliness of response
- Appropriateness/legibility & completeness of documentation
- Appropriateness of prehospital & ED Triage

For example; a delay in surgeon response to a trauma resuscitation that is attributed to an incorrect call schedule.
Such an event may be reviewed by the trauma multidisciplinary committee, usually with a suggested action plan to prevent a recurrence.
Other "Issues area" examples include ED trauma team activation, blood transport to the ED or surgery, patient transport to CT scan, equipment available where/when needed
Even if outcome has been positive, measuring the process can still be valuable to highlight why things went well and to look for opportunities to improve efficiency

Clinical Care Issues
Use consensus, institutional guidelines or national best-practices/standards to evaluate:
- Compliance with guidelines, protocols, pathways
- ATLS Guidelines
- Delays in assessment, diagnosis, treatment or technique
- Errors in communications, judgment or treatment

Outcomes Measures

Results of the care given from the perspective of patient, providers and society.

Along with standard outcomes, parameters such as pain control, team morale, community support, or reduction in falls are not routinely included, but are examples of outcomes that a trauma program may choose to measure and work to improve.

Monitoring to establish whether the process of care achieved the desired outcome.
Mortality (death)
Morbidity (complications) A list of complications is available at www.socialtext.net/acs-demo-wiki/index.cgi?performance_improvement_and_patient_safety_reference_manual
Length of stay – ICU and total
Cost
Functional discharge status or quality of life
Patient safety initiatives such as:
        DVT prophylaxis
        Use of pressure-relieving bedding to prevent pressure ulcers
        Early appropriate enteral nutrition in ICU patients

Quality Indicator Examples

▸ EMS scene time longer than 20 minutes without extrication

▸ Over or under triage for trauma team activation

▸ Medical provider response >30 minutes

▸ Patient with GCS <8 leaving ED without intubation

▸ Hypoxia (PO_2<90%) or hypotension (adult SBP<90) for patients with TBI

▸ Warming measures not initiated for hypothermia (T<96)

▸ ED time >6 hours prior to interfacility transfer

▸ Patient requiring re-intubation within 48 hours of extubation

▸ Trauma patients developing DVT, PE, or decubitus ulcer

▸ Patients discharged home but returned to the hospital for same injury

Regional Trauma Center Feedback

▶ Summary of injuries and care

▶ Performance issues might include:
  ◦ Time at facility prior to transfer and any avoidable delays
  ◦ Need for chest tube at initial facility
  ◦ Need for intubation
  ◦ Inappropriate splinting or cervical spine stabilization

▶ Identify cases for closer review only

▶ Meant to be helpful

▶ Not a judgment of care

One of the goals of the Montana Trauma System is for trauma program staff at the transferring hospital to receive adequate and timely written feedback from the Trauma Program at the Regional Trauma Centers. As the trauma system continues its development, this same feedback is being requested from the Area Trauma Centers to which trauma patients have been transferred.

Summary of injuries identified and care provided

EMS & Trauma Feedback

Web-based trauma registry

Letter returned with each batch of records includes possible PI issues to consider

- Each facility must also internally monitor for PI issues

Bi-annual RTAC summary reports

Annual facility specific summary reports

PI issue identification is facilitated through trauma registry feedback provided by the MT Department of Public Health and Human Services, EMS and Trauma Systems Section.

If you provide data to the State from the web-based form, you will receive a letter back with each batch of records which identify some opportunities you may consider for PI

Because of the limited information provided to the State, the facility must also internally monitor for PI issues as well

Summary reports are provided at two of the RTAC meetings each year

Facility-specific summary reports provided annually

Levels of PI Review

Primary
Secondary
Tertiary

Primary Review

- Concurrent/retrospective issue identification
- TNC may decide there is no issue to pursue or may choose to track the issue and evaluate its rate of occurrence over time
- Documented in PI process
- May be closed at this level without TMD involvement

Secondary Review

- TMD and TNC work together to investigate the issue

- Issue may be closed at this level or it may be decided that further intervention is needed

- This could entail a conversation between the TMD and other provider(s), sending a written letter or deciding to review the case at Multidisciplinary Trauma Committee or with some other group

- May refer to Peer Review

- All actions and the reasons for them must be documented in the PI process

Tertiary Review

▸ **Committee Review**

- A case may be reviewed at many meetings with the discussion focused on the care delivered by that group (mainly review ED care with ED physicians)
- Multidisciplinary Trauma Committee
- Emergency Department Committee
- Medical Peer Review
- PI Subcommittee
  - Regional Trauma Advisory Committee (RTAC)
  - State Trauma Care Committee (STCC)

Multidisciplinary Trauma Committee

Process focused

Works on global system & operational issues

Representatives from all phases of care with attendance recorded

- Medical providers, EMS, nurses, ancillary staff & administration

- Must generate written, protected minutes that not only describe the case but also provide detail on the discussion and conclusions reached

- Linked with hospital PI process

The multidisciplinary trauma committee or perhaps the Emergency Department meeting is where most operational issues for the care of the trauma patient are reviewed and determinations made about what needs to be done. The issues are process-focused and the meeting provides a forum to address and correct system, operational and, at times, provider issues.

Multidisciplinary Trauma Committee

Meet monthly/quarterly to review system & process PI

Try to keep the meetings on the same day of the week and week of the month to increase attendance

Set expectations for attendance and do not routinely cancel meetings

Review minutes from previous meeting

Try to distribute agenda prior to the meeting and be sure to let providers know if a case they were involved in is going to be reviewed

TMD must manage this meeting so open discussions are encouraged in a professional environment

Medical Peer Review

▸ Review of deaths, complications and clinical care issues of seriously injured patients either admitted to the facility or transferred to a higher level of care

▸ Provider-focused with participation of medical providers involved in trauma care

▸ Limited access forum but Trauma Coordinator must attend when trauma cases reviewed

▸ Documentation to be written carefully but include candid discussion and should be clearly labeled "Confidential Performance Improvement/Peer Review"

Consider Medical Executive Committee as the next step of reporting for peer review issues.

Review ALL Trauma Deaths

▸ Trauma deaths automatically included in PI review

▸ Identify injuries
  ◦ Autopsy report/feedback from RTC

▸ Identify co-morbid conditions

▸ Identify all opportunities for improvement

▸ Determine preventability of the death
  ◦ Mortality without opportunity for improvement (was Non-Preventable)
  ◦ Anticipated mortality with opportunity for improvement (was Potentially Preventable)
  ◦ Unanticipated mortality with opportunity for improvement (was Preventable)

All deaths from traumatic injuries should be included in the performance improvement review. Include patients who die in your facility, during inter-facility transport, or at the receiving regional trauma centers. Feedback from the (RTC) is necessary to adequately review the patients who are transferred from the smaller facilities. This review should be included in the confidential PI documentation.

Identify the method of obtaining autopsy results in a timely manner. This is often included in the medical record but may not be timely enough to be included in your PI review. Autopsies may also be obtained through a relationship developed with the county coroner or pathologist.

Identify co-morbid conditions that may have played a role in the patient's demise such as use of anticoagulants or bleeding conditions, morbid obesity, extremes of age, pregnancy, heart or lung disease, cancer, etc.

Should all the italicized info be removed???

Each patient should be placed in one of these preventability categories and documented as such.

Preventability Definitions:

Preventable:

- *Injuries and sequelae considered survivable*

- *Death could have been prevented if appropriate steps had been taken*

- *Frank deviations from standard of care tat, directly or indirectly caused patient's death*

- *Statistically, probability of survival greater than 50%, or Injury severity score (ISS) below 20*

Potentially Preventable:

- *Injuries and sequelae severe but survivable*

- *Death potentially could have been prevented if appropriate steps had been taken*

- *Evaluation and management generally appropriate*

- *Some deviations from standard of care that may, directly or indirectly, have been implicated inpatient's death*

- *Statistically, probability of survival 25-50%, or ISS between 20 & 50*

Non-Preventable:

- *Injuries and sequelae non-survivable, even with optimal management*

- *Evaluation and management appropriate according to accepted standards*

- *If patient had co-morbid factors, these were major contributors to death*

- *Statistically, probability of survival less than 25% or ISS above 50*

Opportunity for Improvement: Despite a non-preventable death, opportunities for improvement in care are identified.

Confidentiality Protection

▶ Confidentiality protection is important to allow for frank discussion of issues with accurate documentation

▶ Include statement of confidentiality on PI documentation

▶ Use generic identifiers for the patient, providers, EMS agency, flight teams, & other facilities

▶ If PI handouts used at meetings, collect and destroy after the meeting has concluded

▶ Keep PI documents locked in a secure area with limited access

Excerpts from the Montana trauma statute that pertain to confidentiality.

50-6-415. Confidentiality.

1) Data in a health care facility's hospital trauma register and reports developed from that data pertaining to quality of trauma care may be given by the facility only to:
    a) the facility's peer review committee;
    b) the regional trauma care advisory committee of the region in which the facility is located;
    c) the trauma care committee; or
    d) the department.
2) Data in the state trauma register and hospital trauma registers is not subject to discovery in a civil action and may not be introduced into evidence in a judicial or administrative proceeding.
3) Data and reports concerning peer review, quality improvement, or the quality of the trauma care provided by a health care facility or a health care provider that are produced by a regional trauma care advisory committee or the trauma care committee or provided by a health care facility to a regional trauma care advisory committee or the trauma care committee, as well as the proceedings of those committees concerning peer review and quality improvement, are not subject to discovery in a civil action and may not be introduced into evidence in a judicial or administrative proceeding.
6) Information in a department record or report that is used to evaluate and improve the quality of emergency medical service and trauma care by a health care facility or emergency medical service is not subject to discovery and may not be introduced in evidence in a judicial or administrative proceeding.
8) A standard or protocol adopted by the department pursuant to this part may not be used to demonstrate negligence or lack of negligence by a health care provider or health care facility to whom the standard or protocol applies.

Excerpt from another Montana code that pertains to confidentiality protection.

50-16-204. Restrictions on use or publication of information. A utilization review, peer review, medical ethics review, quality assurance, or quality improvement committee of a health care facility may use or publish health care information only for the purpose of evaluating matters of medical care, therapy, and treatment for research and statistical purposes. Neither a committee nor the members, agents, or employees of a committee shall disclose the name or

identity of any patient whose records have been studied in any report or publication of findings and conclusions of a committee, but a committee and its members, agents, or employees shall protect the identity of any patient whose condition or treatment has been studied and may not disclose or reveal the name of any health care facility patient.

Regional or State Review

May request case review at either a regional or statewide level

Quarterly Performance Improvement meetings

- Regional Trauma Advisory Committee (RTAC)
  - Contact RTAC Secretary
- State Trauma Advisory Committee (STCC)
  - Contact Trauma System Manager

Issues identified for Performance Improvement may best be reviewed at either a regional or statewide level. Cases reviewed at RTAC or STCC meetings facilitate the identification of regional, cross-regional and/or state-wide systems issues. Montana statute provides for confidentiality of the performance improvement activities.

This is a picture of a Western RTAC meeting.

Conclusions

Evaluation of the issue may include:

- Contributory factors
- Special circumstances
- Lack of equipment
- Limited experience
- Inadequate education
- No policy or guideline covering this situation

The process of analysis of the issue at whatever level it is reviewed should be included in the PI documentation. Contributory factors, explanations, special circumstances, etc. can all affect the outcome and might be included in the explanation or conclusion. There may be inadequate equipment or poor organization of the equipment that is available. It may be identified that there is lack of education, experience, or appropriate evidence-based guideline or policy for trauma patient care. These are examples of what may be included when an issue is evaluated and the conclusions made.

Review:
Trauma patients meeting criteria <u>without</u> activations:
? Good decisions given circumstances
? Were all resources the patient needed available?
? Problems

Trauma Direct Admissions
? Problems
? Potential problems
? Missed injuries, instability, to OR

All Transfers Out
? Time to decision, ? ED times
? Issues related to obtaining/accepting transfer
? Complete stabilization w/interventions
? Diagnostics prior to activating transfer
? Communications w/receiving facility
? Appropriateness of transfer mode; met needs of patient?
? Problems obtaining transfer mode/crews

Action Plan

Examples

- Guideline, protocol, or pathway development &/or revision
- Targeted education (rounds, conferences, journal clubs, lunch & learn sessions with staff)
- Enhanced resources, facilities, or communication
- Counseling
- Peer review presentations
- Change in provider privileges or credentials
- External review at RTAC, STCC or by a Level I Center in another state
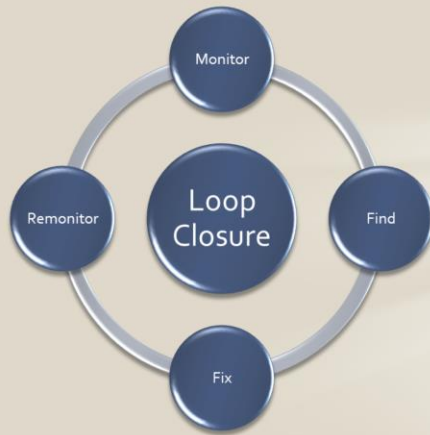
"Closing the Loop"; implies that the process or outcome has been measured after implementation of corrective action plan and improvement has been demonstrated = RESULTS or Improvement occurred

"Systematic use of a defined PI Process can demonstrate improvement"
But more importantly, PI improves patient care
"Some process loops may never be fully closed or complete, but ALL trauma programs should demonstrate continuous pursuit of performance improvement and patient safety"

Performance Improvement documentation includes:

•Patient Care Summary that is brief.

•Important issues to include, if possible; the patient's age, gender, a detailed mechanism of injury and the time the injury occurred. Any significant past medical history and medication use can be very helpful. Examples of these are listed on the next slide. Known and suspected injuries should be listed. A brief overview of the care the patient received helps to set the stage for the performance improvement information to follow when doing tertiary review.

•The Level of Review refers to whether the issue can be effectively dealt with by the trauma coordinator (Level One), the trauma coordinator and the trauma medical director (Level Two) or the one of the various committees discussed (Level Three).

•Under conclusion, state what was discussed and decided.

•Action plan follows and this should be completed with the information about what is going to be done to improve the performance of trauma care.

•Implementation includes recommended changes, who is affected and therefore informed of the action plan, and when the action plan was put into place.

•Evaluation Method for Loop Closure. To be sure the action plan was effective, you should continue monitoring that issue for a period of time to be able to show that you have "closed the loop".

Trauma Indicators	YES	NO	NA	Comments
EMS Scene Time				Arrival: Departure:
EMS Trip Sheet on Chart				
Trauma Team Activation:				Time:
Initiated by EMS				
*Overtriage OR Undertriage				Describe:
Patient Arrival to ED				Time:
Timely Notification of Physician / Surgeon				Time:
Timely Arrival of Physician / Surgeon				Time:
Timely Airway Management / Endotracheal Intubation for:				Time:
Respiratory Insufficiency (Respiratory Rate <10 or >29)				Describe:
Decreased LOC (GCS $\leq$ 8)				GCS Total: Eye: Verbal: Motor:

*Overtriage – Activation with discharge home from ED
Undertriage – No activation for patient transferred to higher level of care, ICU/OR, or died **OR** no activation when patient met criteria

Documentation of PI can be accomplished in a variety of ways. The next three slides give a sample form that can be used and modified for your use and is available (see last slide). This tool gives some examples of primary survey clinical care audit filters you may want to use. These types of clinical care issues will be evaluated by the onsite review team during a trauma designation site survey during the trauma patient medical record review. Simple examples of definitions for over and under triage are given at the bottom but they can be modified to meet each facility's needs.

Trauma Indicators	YES	NO	NA	Comments
Timely Chest Tube Placement for Hemothorax / Pneumothorax				Time: Tube Size / Location:
Patient with Hypotension (adult BP < 90) given Fluid Resuscitation				IV Number / Size: List Fluids / Blood Totals:
Temperature Documented				Temperature: Route:
*Hypothermia Identified:				Time:
Warming Measures				List:
Patient Discharge from ED:				Time:
Transfer > 2 hours				Method: Destination:
Surgery/ICU Admit/Acute Care Admit/Home/Death				
Complete ED Nursing Documentation				
Trauma Flowsheet Utilized				

*Hypothermia – Core body temperature below 96 degrees F (35 degrees C)

Continuation of example trauma audit filters

Trauma PI Documentation

PI Issue	Level of Review Date	Conclusion	Action Plan	Implementation	Evaluation

Sample PI tool continues with the last page providing space where you can document any issues you would like to review for the purposes of performance improvement. All documentation should be concise.
Any PI issues identified are written in the first column. The rest of that line provides prompts on what information should be recorded in your PI documentation.

PRACTICE SESSION

Trauma Case Review for
Performance Improvement

The next few slides provide a chance to review EMS and ED documentation to perform performance evaluation using the sample trauma patient PI tool given previously. The first two slides give information from the ED and EMS records. Please complete one of the sample PI tools for these slides before moving to the next slide which will give an example of how the tool could be completed. The care of the patient is summarized first. This is nice to provide and help others at the tertiary level of review to view a "thumb nail sketch" or synopsis of the case before performance issues are discussed.

EMS Documentation

Paged out for MVC at approximately 1050

Dispatched 1100, responded 1115, on scene 1130, left scene 1145, arrived at facility 1200

MIVT radio report to hospital at 1155

- **M**- 65 year old unrestrained male driver in single vehicle rollover with ejection, found 30 feet from vehicle. Patient on Coumadin.
- **I**- Suspected injuries include TBI & chest injuries
- **V**- 120-32-120/80, O2 sat 90%, GCS 10
- **T**- Oxygen via NRB at 15L/min with spinal stabilization

EMS trip sheet includes this information. You may encounter difficulties in procuring trip sheets from EMS agencies, especially if their base of operations is in another town. This is important information and worth the time involved in "chasing it down"

Emergency Department Documentation

- 1157: Provider notified, 1200: patient arrives, 1205: provider arrives
- 1203: Initial vital signs 120-32-118/82, O2 sat 88% on NRB 15 L/min, temp 98.9 R, GCS 10 (2-4-4), pupils equal & reactive, VS & NS repeated q 15 min on trauma flowsheet
- 1215: Endotracheal intubation with RSI
- 1225: Verified tube placement by portable CXR which also revealed multiple right rib fractures with moderate sized pneumothorax, portable pelvis and lateral c-spine films obtained later showed no injuries, vital signs 130-30-104/84, GCS 10
- 1210/1227: Two 18 gauge IVs placed with LR hung
- 1325: 28F chest tube placed on right side
- 1400: Vital signs 88-24-128/82, 2 liters LR infused
- 1405: Flight team leaves with the patient, notification time 1220

This information was obtained when reviewing the emergency department nursing and provider documentation and radiology reports.

Brief Patient Summary

This is the case of a 65 year old male who was the unrestrained driver in a rollover with ejection 30 feet from vehicle at 1050.

Current meds include Coumadin.

Injuries include a TBI with GCS of 10 and multiple right rib fractures with pneumothorax.

The patient remained in spinal stabilization with back raft, was intubated and right chest tube placed. He was transferred by flight to RTC two hours after arrival.

It is nice to have a short summary of the patient's case. If possible, include the patient's age, gender, a detailed mechanism of injury and the time the injury occurred. Any significant past medical history and medication use can be very helpful (as in this patient's case). Examples of these are listed on the next slide. Known and suspected injuries should be listed. A brief overview of the care the patient received helps to set the stage for the performance improvement information to follow when doing tertiary review.
A good format to follow is M-I-V-T - Mechanism, Injuries, Vitals, Treatments rendered

Trauma Indicators	YES	NO	NA	Comments
EMS Scene Time	X			Arrival: 1130 Departure: 1145 Total: 15 min
EMS Trip Sheet on Chart	X			
Trauma Team Activation:		X		Time: Hospital called at 1155, 5 min PTA
Initiated by EMS		X		
*Overtriage OR (Undertriage)	X			Describe: TBI with GCS of 10, chest injuries, RR 32 with sat 90% on NRB 15 L/min and no trauma team activated
Patient Arrival to ED				Time: 1200
Timely Notification of Physician / Surgeon		X		Time: 1157
Timely Arrival of Physician / Surgeon	X			Time: 1205
Timely Airway Management / Endotracheal Intubation for:	X			Time: Intubated at 1210, 10 min after pt arrival & 5 min after provider arrival
Respiratory Insufficiency (Respiratory Rate <10 or >29)	X			Describe: RR 32 with O2 sat of 86% on NRB
Decreased LOC (GCS ≤ 8)			X	GCS Total: 10 Eye: 2 Verbal: 4 Motor: 4

*Overtriage – Activation with discharge home from ED
Undertriage – No activation for patient transferred to higher level of care, ICU/OR, or died OR no activation when patient met criteria

Example of how form could be completed for the case reviewed.

Trauma Indicators	YES	NO	NA	Comments
Timely Chest Tube Placement for Hemothorax / Pneumothorax		X		Time: 1325 after identified at 1225 Tube Size / Location: Small 28F on right
Patient with Hypotension (adult BP < 90) given Fluid Resuscitation			X	IV Number / Size: Two 18g at 1210 & 1227 List Fluids / Blood Totals: 2 liters of LR, BP OK
Temperature Documented	X			Temperature: 98.9 Route: R
*Hypothermia Identified:			X	Time:
Warming Measures			X	List:
Patient Discharge from ED:	X			Time: 1405 (just over 2 hours after admission)
Transfer > 2 hours	X			Method: Emergency flight team Destination: Regional Trauma Center
Surgery/ICU Admit/Acute Care Admit/Home/Death			X	
Complete ED Nursing Documentation	X			Good nursing documentation
Trauma Flowsheet Utilized	X			
*Hypothermia – Core body temperature below 96 degrees F (35 degrees C)				

Example of how form could be completed for the case reviewed.

Trauma PI Documentation

PI Issue	Level of Review Date	Conclusion	Action Plan	Implementation	Evaluation
Trauma team not activated Undertriage					
Provider notified late					
Chest tube placed 1 hr after pneumothorax identified					

Example of how form could be completed for the case reviewed.

Performance Improvement

Improving patient care through:

- Development of a strategic plan for trauma care

- Obtaining resources for the facility

- Guiding education & outreach efforts

- Guiding injury prevention efforts

- Assessment of provider/nurse/EMT competency

- Shows the effectiveness of clinical protocols/guidelines

Strategic Trauma Plan

Obtain input/buy-in from EMS, hospital staff, & medical providers who participate in trauma care

Develop overriding plan for trauma care

Driven & validated by the Trauma PI program

Developing a strategic trauma plan based on continually monitoring and making efforts to improve care can be very powerful.

There is great benefit in obtaining buy-in from EMS, hospital staff, and medical providers who participate in trauma care to develop an overriding plan on how care is provided for the seriously injured patients. Those who participate in the care need to be given an opportunity to participate in the plan development and evaluation. Involvement will lead to greater acceptance of the plan and will usually improve the final product as all perspectives are considered.

The trauma plan should be driven and validated by the trauma PI program.

Use what you find in your PI monitoring to guide what education is offered/delivered.

Use to determine staff education, outreach & injury prevention priorities

Seek out educational offerings

Provide in-house education

Consider routine competency evaluation, especially for low-volume, high-risk procedures, equipment and care modalities

Clinical Protocols/Guidelines

▶ By-product of productive performance improvement
  ◦ Decreases variation and errors
  ◦ Increases positive patient outcomes

▶ Evidence-based medicine standard of care

▶ Ensures all care is:
  ◦ Contemporary
  ◦ Consistent between providers

▶ Monitor after implementation to determine effectiveness

Utilization of JCAHO "Harm & Error"

Newer approach that focuses not just on "opportunities for improvement", but on why the individual &/or system failed

Attempts to quantify the amount of harm suffered by the patient

Attempts to address the nature of the error if one occurred:
- Missed assessment
- Correct assessment but incorrect plan generated
- Correct assessment with appropriate plan but plan poorly executed

"Harm & Error" should be evaluated on all cases with significant opportunities for improvement - Ideally, trends would be tracked over a period of years in order to evaluate strengths and weaknesses of your system

Benchmarking

Comparing outcome measures with like-sized facilities with the same verification/designation level

May be in same state or even with similar Trauma Centers in neighboring states

National Trauma Data Bank (NTDB)

New emphasis on risk-adjusted benchmarking - One example is a commercial product offered by the American College of Surgeons, TQIP

Summary

Performance Improvement is the key to making the care you provide for the trauma patient the best it can be

Additional Resources

STN Trauma Outcomes & Performance Improvement Course (TOPIC)
www.traumanurses.org/topic-courses.html

ACS Trauma Performance Improvement and Patient Safety Reference Manual ACS PI and Patient Safety Reference Manual

Trauma PI Case Documentation Tool: PI Case

Eastern Association for the Surgery of Trauma www.east.org

Trauma Nursing: From Resuscitation through Rehabilitation by Karen McQuillan, WB Saunders

Harborview Medical Center, Seattle, WA: www.uwmedicine/harborview

www.trauma.org

American Trauma Society: www.amtrauma.org